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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/509,007 | 09/24/2004 | Bernard Aspar | 034299-601 | 1041 |

7590 04/28/2006
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| EXAMINER |
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WILCZEWSKI, MARY A

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| ART UNIT | PAPER NUMBER |
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2822

DATE MAILED: 04/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/509,007

Applicant(s)

ASPAR ET AL.

Examiner

M. Wilczewski

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-14 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>15.11.04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-5, and 7-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aspar et al., U.S. Patent 6,204,079 (hereinafter Aspar et al '079).

Aspar et al. '079 disclose a method for making a thin layer comprising the steps of obtaining a support handle 10 (Figure 3); preparing the front face of wafer 2 which includes incomplete planarisation of layer 8 to obtain a bonding energy E_0 with the bonding face of support handle 10 (Figures 1 and 2 and column 4, lines 50-67), the bonding energy E_0 between a first value corresponding to the maximum bonding energy compatible with a later thinning step and a second value corresponding to the maximum bonding energy compatible with a subsequent desolidarisation operation (column 5, lines 44-57); solidarizing the front face of the wafer 2 on the bonding face of the support handle 10 (Figures 1-3 and column 4, lines 61-67); thinning the wafer 2 starting from its back face until thin layer 6 is obtained (Figure 4 and column 5, lines 1-8); and transferring surface elements 4 (semiconductor chips composed of electronic components) from thin layer 6 onto a usage support 18, involving separation from the support handle 10 (Figures 5-8 and column 5, line 9, bridging column 6 to line 8).

Aspar et al. '079 disclose cutting the thin layer 6 into surface elements by etching and/or sawing (column 5, lines 9-21 and claim 11). It is further disclosed that mechanical means are used to separate the surface elements 4 from the support handle 10 to the usage support 18 (column 5, lines 58-64 and claim 21).

Aspar et al. '079 disclose that the surface of layer 8 is planarized and that the bonding energy of this surface is controlled by modifying the roughness of the surface, column 4, lines 50-60. However, Aspar et al. '079 do not expressly state that the surface of layer 8 is planarized by chemical-mechanical polishing, as recited in claim 10. However, in column 5, lines 22-30, Aspar et al. '079 disclose that micro-roughness of a surface can be obtained by chemical-mechanical polishing. It would have been obvious to one skilled in the art that a chemical-mechanical polishing step could be used to modify the roughness of the surface of layer 8 thereby providing incomplete planarization.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aspar et al. '079, as applied to claim 4 above, and further in view of Aspar et al., Publication No. US 2003/0077885 (hereinafter Aspar et al. '885).

Aspar et al '079 is applied as above. Aspar et al. '079 lacks anticipation only of cutting the support handle at the same time as the thin layer is cut. Aspar et al. '885 discloses a method similar to that of Aspar et al. '079 in which surface elements are transferred from a support handle to a usage support (Figures 2A-2I and paragraphs [0074]-[0077]). As shown in Figures 2F-2G, prior to transferring the surface elements,

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the handle support 17 is cut at the same time the thin layer 15 is cut. In light of the teaching of Aspar et al '885, it would have been obvious to one skilled in the art that the support handle could be cut at the same time as the thin layer in the formation of the surface elements in the known method of Aspar et al. '079, since this is clearly a well known technique used in the transferring of surface elements from a handle support to a usage support.

Allowable Subject Matter

Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additionally cited references disclose the transferring of surface elements from a support handle to a usage support.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Wilczewski whose telephone number is (571) 272-1849. The examiner can normally be reached on Monday and Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on 571-272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



M. Wilczewski
Primary Examiner
Tech Center 2800